Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1, 13, and 35 have been amended and claims 6-8, 16, 19, 20, 39, 46, and 48 have been cancelled as follows:

1. (Currently Amended) A method of removing silicon dioxide upon an etch stop layer, the method comprising:

providing a silicon dioxide dielectric layer upon an etch stop layer, wherein the etch stop layer comprises refractory metal nitride;

providing a gaseous etchant including a hydrofluorocarbon etch gas and including an etch selectivity enhancing fluorocarbon compound selected from the group consisting of CF_4, C_2F_6, C_4F_8, C_5F_6, C_5F_8, and combinations thereof; and

exposing the silicon dioxide dielectric layer to the gaseous etchant in an etch chamber having a roof composed of silicon and having a temperature in a range from about 100° C to about 200° C.

2. (Cancelled)

3. (Previously Presented) A method as defined in claim 1, wherein:

the hydrofluorocarbon etch gas is provided at from about 30 sccm to about 50 sccm and the etch selectivity enhancing fluorocarbon compound is provided at from about 0 sccm to about 25 sccm; and

the silicon dioxide dielectric layer is exposed to the gaseous etchant at a pressure of from about 10 mTorr to about 40 mTorr.

4. (Original) A method as defined in claim 1, wherein the hydrofluorocarbon is provided in a first quantity, the fluorocarbon is provided in a second quantity, and the first quantity is at least twice the second quantity.

5. (Previously Presented) A method as defined in claim 3, wherein the refractory metal nitride is selected from the group consisting of cobalt nitride, titanium nitride, tungsten nitride, and hafnium nitride.

6-8. (Cancelled)

9. (Original) A method according to claim 1, wherein etching the silicon dioxide dielectric layer in the gaseous etchant is carried out until the etch stop layer is exposed.

10. (Original) A method according to claim 1, wherein the selectivity compound is supplied in a range from about less than one part to about 15 parts, and the hydrofluorocarbon is CHF_3 supplied in a range from about 30 parts to about 50 parts.

11. (Original) A method according to claim 1, wherein the selectivity compound is supplied in about 15 parts and the hydrofluorocarbon is CHF_3 supplied in about 44 parts to about 45 parts.

12. (Original) A method according to claim 1, wherein the selectivity compound is supplied in a range from about 0.5 parts to about 4 parts and the hydrofluorocarbon is CHF_3 supplied in about 44 parts to about 45 parts.

13. (Currently Amended) A method of etching a self-aligned contact comprising:

providing a refractory metal nitride etch stop layer on each gate stack in a pair of adjacent, spaced apart gate stacks situated over a semiconductive substrate and a silicon dioxide dielectric layer on the silicon nitride layer;

placing the semiconductive substrate in an etch chamber, wherein the etch chamber has a roof composed of silicon;

etching into the silicon dioxide dielectric layer in the etch chamber, wherein the etch chamber has a temperature in a range from about 100° C to about 200° C, to form a self aligned contact hole between the pair of gate stacks without substantially etching the etch stop layer on the sidewalls of the contact hole, using gaseous CHF_3 and an etch selectivity enhancing compound selected from the group consisting of CF_4, C_2F_6, C_4F_8, C_5F_6, C_5F_8, and combinations thereof;

etching the contact hole to the semiconductive substrate; and

stopping said etching after the etch exposes the silicon nitride layer.

14. (Previously Presented) A method of removing silicon dioxide dielectric upon an etch stop layer that is situated upon a semiconductive substrate positioned within an etch chamber, the method comprising:

etching the silicon dioxide dielectric to a first depth with a first etch recipe including a hydrofluorocarbon, the first etch recipe having a first selectivity to the etch stop layer, wherein the etch stop layer is refractory metal nitride;

etching the silicon dioxide dielectric to a second depth with a second etch recipe including the hydrofluorocarbon and an etch selectivity enhancing compound consisting of a fluorocarbon selected from the group consisting of CF_4, C_2F_6, C_4F_8, C_5F_6, C_5F_8, and combinations thereof, the second etch recipe having a second selectivity to the etch stop layer, wherein the first selectivity is greater than the second selectivity; and

stopping the second etching upon the etch stop layer.

15. (Original) A method as defined in claim 14, wherein the selectivity compound is selected from the group consisting of CF_4, C_2F_6, C_4F_8, C_5F_6, C_5F_8, and combinations thereof.

16. (Cancelled)

17. (Cancelled)

18. (Previously Presented) A method as defined in claim 14, wherein the refractory metal nitride is selected from the group consisting of cobalt nitride, titanium nitride, tungsten nitride, and hafnium nitride.

19. (Cancelled)

20. (Cancelled)

21. (Original) A method as defined in claim 14, wherein the etch chamber has a roof composed of silicon roof that is at temperature in a range from about 100° C to about 200° C while etching the silicon dioxide to the first and second depths.

22. (Original) A method as defined in claim 14, wherein the first etch recipe includes CH_2F_2, CH_3F, or mixtures thereof.

23. (Original) A method as defined in claim 14, wherein the selectivity compound is supplied in a range from about less than one part to about 15 parts, and the hydrofluorocarbon is supplied in a range from about 30 parts to about 50 parts.

24. (Original) A method as defined in claim 14, wherein the selectivity compound is supplied in about 15 parts and the hydrofluorocarbon is supplied in about 44 parts to about 45 parts.

25. (Original) A method as defined in claim 14, wherein the selectivity compound is supplied in a range from about 0.5 to about 4 parts and the hydrofluorocarbon is supplied in about 44 parts to about 45 parts.

26. (Original) A method as defined in claim 14, wherein:

the etch stop layer is a spacer on each gate stack in a pair of adjacent, spaced apart gate stacks situated over the semiconductive substrate;

the silicon dioxide dielectric is formed over and between the gate stacks;

etching the silicon dioxide dielectric to the first and second depths forms a contact hole between the pair gate stacks without etching the spacer.

27. (Original) A method as defined in claim 26, wherein the contact hole is self-aligned contact hole with respect to the pair of gate stacks.

28. (Original) A method as defined in claim 14, wherein the contact hole has an aspect ratio of at least 5:1.

29. (Previously Presented) An etching method comprising:

providing an etch chamber and a semiconductive substrate having thereon a bulk dielectric upon an underlying layer that comprises a refractory metal nitride;

etching the bulk dielectric with a first etch recipe including hydrofluorocarbon and an etch selectivity enhancing gas consisting of fluorocarbon in a first proportion; and

etching the bulk dielectric with a second etch recipe including hydrofluorocarbon and the etch selectivity enhancing gas in a second proportion that is greater than the first proportion, wherein etch selectivity to the underlying layer is greater for the second etch recipe than etch selectivity for the first etch recipe.

30. (Original) A method as defined in claim 29, wherein the fluorocarbon is supplied in time and concentration pulsed intervals.

31. (Original) A method as defined in claim 29, wherein the bulk dielectric layer is selected from the group consisting of doped and undoped silicon dioxide.

32. (Cancelled)

33. (Original) A method as defined in claim 29, wherein the selectivity gas is selected from the group consisting of CF_4, C_2F_6, C_4F_8, C_5F_6, C_5F_8, and combinations thereof.

34. (Original) A method as defined in claim 29, wherein the hydrofluorocarbon is CHF_3 supplied in about 30 parts to about 50 parts and the selectivity gas of the second etch recipe is supplied in a range from less than about 1 parts to about 15 parts.

35. (Currently Amended) A method as defined in claim 29, wherein:

the bulk dielectric is composed of silicon dioxide.~~; and~~

~~the underlying layer is composed of silicon nitride.~~

36. (Previously Presented) In an etch chamber having a roof composed of silicon, a semiconductive substrate support for supporting a semiconductive substrate having a bulk dielectric disposed upon an etch stop layer, and having a silicon ring surrounding the semiconductive substrate support, an etching method comprising:

maintaining the temperature of:

the roof of the etch chamber in a range from about 135° C to about 200° C;

the semiconductive substrate support in a range from about -30° C to about 80° C; and

the silicon ring in a range from about 180° C to about 250° C;

etching a recess having an aspect ratio of at least 5:1 in the bulk dielectric using a gaseous etchant including CHF_3 and an etch selectivity enhancing compound consisting of carbon and fluorine;

etching the recess to the semiconductive substrate; and

stopping etching the recess after the etch stop layer has been exposed, wherein the etch stop layer comprises refractory metal nitride.

37. (Cancelled)

38. (Original) A method as defined in claim 36 ~~37~~, wherein the refractory metal nitride is selected from the group consisting of cobalt nitride, titanium nitride, tungsten nitride, and hafnium nitride.

39. (Cancelled)

40. (Original) A method according to claim 36, wherein the bulk dielectric is composed of silicon dioxide and the etch stop layer is composed of silicon nitride.

41. (Original) A method as defined in claim 36, wherein:

the etch stop layer is a spacer on each gate stack in a pair of separated gate stacks situated over the semiconductive substrate;

the bulk dielectric is formed over and between the gate stacks;

said etching forms a contact hole between the pair gate stacks without etching the spacer.

42. (Previously Presented) A method of determining a specific etch recipe for etching silicon dioxide with predetermined selectivity to an etch stop layer underlying the silicon dioxide, the method comprising:

etching silicon dioxide with a gaseous etchant including a hydrofluorocarbon and an etch selectivity enhancing gas consisting of carbon and fluorine to obtain a selectivity to the etch stop layer, wherein the etch stop layer comprises refractory metal nitride;

repeating said etching with different amounts of said etch selectivity enhancing gas consisting of carbon and fluorine to correspondingly obtain different selectivities to said etch stop layer;

selecting an amount of said different amounts of said etch selectivity enhancing gas corresponding to a desired etch selectivity to said etch stop layer; and

etching silicon dioxide with a gaseous etchant including the hydrofluorocarbon and said selected amount of said selectivity gas to obtain said desired selectivity to the etch stop layer.

43. (Original) A method as defined in claim 42, wherein the selectivity gas is selected from the group consisting of CF_4, C_2F_6, C_4F_8, C_5F_6, C_5F_8, and combinations thereof.

44. (Cancelled)

45. (Original) A method as defined in claim 42 44, wherein the refractory metal nitride is selected from the group consisting of cobalt nitride, titanium nitride, tungsten nitride, and hafnium nitride.

46. (Cancelled)

47. (Original) A method as defined in claim 46, wherein:

the nitride compound is a spacer on each gate stack in a pair of separated gate stacks situated over the semiconductor substrate;

the silicon dioxide is formed over and between the gate stacks;

each of said etching steps forms a contact hole between the pair gate stacks without etching the spacer.

48. (Cancelled)

49. (Original) A method as defined in claim 42, wherein the contact hole has an aspect ratio of greater than about 5:1.